

27/04/09-12:25

8

US 08/809,620 (TE20081024)

Reply to OA on 04/30/08

*Cassandra Sparrow**Att Unit 2800*

(10)

Amendments claims on 07/12/06 (07/17/06) (TE20060526)

Marked up version

Claims

1 (amended) - Optical device comprising a mirror and a device actuating the mirror, characterized in that the mirror and the actuating device are free independent concave membranes (called membranous mirror and actuating membrane) without contact between them or with other device, and tied by their central parts to the telescope.

Claims 14, 18, 19, 44 canceled (Current work 10/20/08)

45 (new) - Telescope optical device according to claim 1,

characterized in that there are two levels of control to give at the free membranous mirror a perfect shape :

In a first level, an approximate shape is given to the free actuating membrane by interaction of a magnetic field tied to the telescope with magnetic fields generated by actuating membrane:

in a second level, a perfect form is given to the free membranous mirror by electrostatic interaction of the free actuating membrane with the free membranous mirror.

46 (new) - Telescope optical device according to claim 1,

characterized in that by use of the capacitive coupling between the conductive layer of the mirror and specific electrodes of the actuating membrane, the spread electronic integrated in the actuating membrane acts for the self-stabilisation of the shape of the system mirror-actuating membrane.

47 (new - 15 third amended) - Optical device according to claim 1,

characterized in that, for its folding, the concave membranous mirror is deformed by the formation of concentric circular ondulations obtained by a succession of centered distortions alternately concave and convex, altering the pure concave surface of the membranous mirror in a circular surface comprising a series of circular centered waves whose the vertical crest to crest distance is so small as one wishes, in view of the number of waves so great as one wishes.

and in that the thin almost flat object so obtained is wound onto itself, forming a cylinder.

48 (new - 15 third amended) Optical device according to claim 1,

characterized in that, for its folding, the concave membranous actuating membrane is deformed by the formation of concentric circular ondulations obtained by a succession of centered distortions alternately concave and convex, altering the pure concave surface of the actuating membrane in a circular surface comprising a series of circular centered waves whose the vertical crest to crest distance is so small as one wishes, in view of the number of waves so great as one wishes.

and in that the thin almost flat object so obtained is wound onto itself, forming a cylinder.

27/04/09-12:25

8

US 08/809,620 (TE20081024)

Reply to OA on 04/30/08

27/04/09-12:25

9

US 08/809,620 (TE20081024)

Reply to OA on 04/30/08

*Cassandra Syrigou**Clean version under 37CFR 1.121(c) - Claim 15 not canceled**47 (new - 15 third amended) - 48 (new - 15 third amended)**07/12/06 CLAIMS (TE20060526)*

1 (twice amended)- Telescope optical device comprising a mirror and a device actuating the mirror,

characterized in that the mirror and the actuating device are free concave membranes without contact between them, or with other device, and tied by their central parts to the telescope.

14 (canceled), 18 (canceled), 19 (canceled), 44 (canceled)

45 (new) - Telescope optical device according to claim 1,

characterized in that there are two levels of control to give at the free membranous mirror a perfect shape :

In a first level, an approximate shape is given to the free actuating membrane by interaction of a magnetic field tied to the telescope with magnetic fields generated by actuating membrane;

in a second level, a perfect form is given to the free membranous mirror by electrostatic interaction of the free actuating membrane with the free membranous mirror.

46 (new) - Telescope optical device according to claim 1,

characterized in that by use of the capacitive coupling between the conductive layer of the mirror and specific electrodes of the actuating membrane, the spread electronic integrated in the actuating membrane acts for the self-stabilisation of the shape of the system mirror--actuating membrane.

47 (new - 15 third amended) - Optical device according to claim 1,

characterized in that, for its folding, the concave membranous mirror is deformed by the formation of concentric circular ondulations obtained by a succession of centered distortions alternately concave and convex, altering the pure concave surface of the membranous mirror in a circular surface comprising a series of circular centered waves whose the vertical crest to crest distance is so small as one wishes, in view of the number of waves so great as one wishes.

and in that the thin almost flat object so obtained is wound onto itself, forming a cylinder.

48 (new - 15 third amended) Optical device according to claim 1,

characterized in that, for its folding, the concave membranous actuating membrane is deformed by the formation of concentric circular ondulations obtained by a succession of centered distortions alternately concave and convex, altering the pure concave surface of the actuating membrane in a circular surface comprising a series of circular centered waves whose the vertical crest to crest distance is so small as one wishes, in view of the number of waves so great as one wishes.

and in that the thin almost flat object so obtained is wound onto itself, forming a cylinder.

27/04/09-12:25

9

US 08/809,620 (TE20081024)

Reply to OA on 04/30/08

27/04/09-12:25

10

US 08/809,620 (TE20081024)

Reply to OA on 04/30/08

→ Cassandra Spreuer
Art Unit 2800

(12)

Clean version under 37CFR 1.121(c) - Claim 15 canceled

47 (new) - 48 (new)

07/12/06 CLAIMS (TE20060526)

1 (twice amended)- Telescope optical device comprising a mirror and a device actuating the mirror,

characterized in that the mirror and the actuating device are free concave membranes without contact between them, or with other device, and tied by their central parts to the telescope.

14 (canceled), 15 (canceled), 18 (canceled), 19 (canceled), 44 (canceled)

45 (new) - Telescope optical device according to claim 1,

characterized in that there are two levels of control to give at the free membranous mirror a perfect shape :

In a first level, an approximate shape is given to the free actuating membrane by interaction of a magnetic field tied to the telescope with magnetic fields generated by actuating membrane;

in a second level, a perfect form is given to the free membranous mirror by electrostatic interaction of the free actuating membrane with the free membranous mirror.

46 (new) - Telescope optical device according to claim 1.

characterized in that by use of the capacitive coupling between the conductive layer of the mirror and specific electrodes of the actuating membrane, the spread electronic integrated in the actuating membrane acts for the self-stabilisation of the shape of the system mirror-actuating membrane.

47 (new) - Optical device according to claim 1,

characterized in that, for its folding, the concave membranous mirror is deformed by the formation of concentric circular undulations obtained by a succession of centered distorsions alternately concave and convex, altering the pure concave surface of the membranous mirror in a circular surface comprising a series of circular centered waves whose the vertical crest to crest distance is so small as one wishes, in view of the number of waves so great as one wishes.

and in that the thin almost flat object so obtained is wound onto itself, forming a cylinder.

48 (new) Optical device according to claim 1,

characterized in that, for its folding, the concave membranous actuating membrane is deformed by the formation of concentric circular undulations obtained by a succession of centered distorsions alternately concave and convex, altering the pure concave surface of the actuating membrane in a circular surface comprising a series of circular centered waves whose the vertical crest to crest distance is so small as one wishes, in view of the number of waves so great as one wishes.

and in that the thin almost flat object so obtained is wound onto itself, forming a cylinder.

27/04/09-12:25

10

US 08/809,620 (TE20081024)

Reply to OA on 04/30/08

27/04/09-12:25

11

US 08/809,620 (TE20081024)

Reply to OA on 04/30/08

*→ Cassandra Spyrou**Art Unit 2800**(13)***Mistake in the numbering of the claims.**

The number 45, with the status of new, has soon be used in entered claims listings filed on 06/28/01, with the same status of new, but for an other object.

This claim 45 (new) does not seem to have been canceled in claims listing filed after 06/28/01, on 07/12/06, with others claims 14, 18, 19 and 44, in marked up version (see page 6)

It has been canceled by a CURRENT amendment page 5

So, for correction, the second claims 45, and claims 46, 47, 48 and 49 will be canceled, and the numbering will restart from new claim 50 to new claim 53, under 37 CFR 1.121(c)(5).

27/04/09-12:25

11

US 08/809,620 (TE20081024)

Reply to OA on 04/30/08

27/04/09-12:25

12

US 08/809,620 (TE20081024)
Reply to OA on 04/30/08

→ Cassandra Spyrou
Art Unit 2800

(14)

CURRENT AMENDMENTS

Working document, with text of canceled claims to allow to see that the new claims 50, 51, 52, 53 are identical to the canceled 46, 47, 48, 49.

Corrected 07/12/06 CLAIMS (TE20060526)

1 (twice amended) Telescope optical device comprising a mirror and a device actuating the mirror,

characterized in that the mirror and the actuating device are free concave membranes without contact between them, or with other device, and tied by their central parts to the telescope..

14-15 (canceled), 18-19 (canceled), 44 (canceled)

45 (canceled)

46 (canceled) Telescope optical device according to claim 1,

characterized in that there are two levels of control to give at the free membranous mirror a perfect shape :

In a first level, an approximate shape is given to the free actuating membrane by interaction of a magnetic field tied to the telescope with magnetic fields generated by actuating membrane;

in a second level, a perfect form is given to the free membranous mirror by electrostatic interaction of the free actuating membrane with the free membranous mirror.

47 (canceled) - Telescope optical device according to claim 1.

characterized in that by use of the capacitive coupling between the conductive layer of the mirror and specific electrodes of the actuating membrane, the spread electronic integrated in the actuating membrane acts for the self-stabilisation of the shape of the system mirror--actuating membrane.

48 (canceled) - Optical device according to claim 1,

characterized in that, for its folding, the concave membranous mirror is deformed by the formation of concentric circular ondulations obtained by a succession of centered distortions alternately concave and convex, altering the pure concave surface of the membranous mirror in a circular surface comprising a series of circular centered waves whose the vertical crest to crest distance is so small as one wishes, in view of the number of waves so great as one wishes.

and in that the thin almost flat object so obtained is wound onto itself, forming a cylinder.

49 (canceled) Optical device according to claim 1,

characterized in that, for its folding, the concave membranous actuating membrane is deformed by the formation of concentric circular ondulations obtained by a succession of

27/04/09-12:25

12

US 08/809,620 (TE20081024)
Reply to OA on 04/30/08

27/04/09-12:25

13

US 08/809,620 (TE20081024)

Reply to OA on 04/30/08

→ Cassandra Givron 1st Unit
2800

centered distortions alternately concave and convex, altering the pure concave surface of the actuating membrane in a circular surface comprising a series of circular centered waves whose the vertical crest to crest distance is so small as one wishes, in view of the number of waves so great as one wishes.

and in that the thin almost flat object so obtained is wound onto itself, forming a cylinder.
50 (new) Telescope optical device according to claim 1,

characterized in that there are two levels of control to give at the free membranous mirror a perfect shape :

In a first level, an approximate shape is given to the free actuating membrane by interaction of a magnetic field tied to the telescope with magnetic fields generated by actuating membrane;

in a second level, a perfect form is given to the free membranous mirror by electrostatic interaction of the free actuating membrane with the free membranous mirror.

51 (new) Telescope optical device according to claim 1,

characterized in that by use of the capacitive coupling between the conductive layer of the mirror and specific electrodes of the actuating membrane, the spread electronic integrated in the actuating membrane acts for the self-stabilisation of the shape of the system mirror--actuating membrane.

52 (new) Optical device according to claim 1,

characterized in that, for its folding, the concave membranous mirror is deformed by the formation of concentric circular ondulations obtained by a succession of centered distortions alternately concave and convex, altering the pure concave surface of the membranous mirror in a circular surface comprising a series of circular centered waves whose the vertical crest to crest distance is so small as one wishes, in view of the number of waves so great as one wishes.

and in that the thin almost flat object so obtained is wound onto itself, forming a cylinder.
53 (new) Optical device according to claim 1,

characterized in that, for its folding, the concave membranous actuating membrane is deformed by the formation of concentric circular ondulations obtained by a succession of centered distortions alternately concave and convex, altering the pure concave surface of the actuating membrane in a circular surface comprising a series of circular centered waves whose the vertical crest to crest distance is so small as one wishes, in view of the number of waves so great as one wishes.

and in that the thin almost flat object so obtained is wound onto itself, forming a cylinder.

27/04/09-12:25

13

US 08/809,620 (TE20081024)

Reply to OA on 04/30/08

27/04/09-12:25

14

US 08/809,620 (TE20081024)

Reply to OA on 04/30/08

CURRENT AMENDMENT

Amended claims as they would must appear on 07/12/06 after
correction of mistake twice claim 45, with new claims 50-53

(16)

New claims listing on October 24, 2008

1(twice amended)- Telescope optical device comprising a mirror and a device actuating the mirror,

characterized in that the mirror and the actuating device are free concave membranes without contact between them, or with other device, and tied by their central parts to the telescope.

14-15 (canceled), 18-19 (canceled), 44 (canceled), 45-49 (canceled)

50(new) Telescope optical device according to claim 1,

characterized in that there are two levels of control to give at the free membranous mirror a perfect shape :

In a first level, an approximate shape is given to the free actuating membrane by interaction of a magnetic field tied to the telescope with magnetic fields generated by actuating membrane;

In a second level, a perfect form is given to the free membranous mirror by electrostatic interaction of the free actuating membrane with the free membranous mirror.

51(new) Telescope optical device according to claim 1,

characterized in that by use of the capacitive coupling between the conductive layer of the mirror and specific electrodes of the actuating membrane, the spread electronic integrated in the actuating membrane acts for the self-stabilisation of the shape of the system mirror--actuating membrane.

52(new) Optical device according to claim 1,

characterized in that, for its folding, the concave membranous mirror is deformed by the formation of concentric circular undulations obtained by a succession of centered distorsions alternately concave and convex, altering the pure concave surface of the membranous mirror in a circular surface comprising a series of circular centered waves whose the vertical crest to crest distance is so small as one wishes, in view of the number of waves so great as one wishes.

and in that the thin almost flat object so obtained is wound onto itself, forming a cylinder.

53(new) Optical device according to claim 1,

characterized in that, for its folding, the concave membranous actuating membrane is deformed by the formation of concentric circular undulations obtained by a succession of centered distorsions alternately concave and convex, altering the pure concave surface of the actuating membrane in a circular surface comprising a series of circular centered waves whose the vertical crest to crest distance is so small as one wishes, in view of the number of waves so great as one wishes.

and in that the thin almost flat object so obtained is wound onto itself, forming a cylinder.

27/04/09-12:25

14

US 08/809,620 (TE20081024)

Reply to OA on 04/30/08

27/04/09-12:25

15

US 08/809,620 (TE20081024)
Reply to OA on 04/30/08

→ Cassandra Spyrou
Art Unit 2800

(17)

E – Other replies to Office Action on 04/30/08**1) I ask for cancelation of the word "electrostatic" in claim 50(new).****2) I ask for cancelation of the last lines :**

"and in that the thin flat object so obtained is wound onto itself,
forming a cylinder."

in claims 52(new) and 53(new).

27/04/09-12:25

15

US 08/809,620 (TE20081024)
Reply to OA on 04/30/08

27/04/09-12:25

16

US 08/809,620 (TE20081024)

Reply to OA on 04/30/08

→ Cassandra Spyrou
Art Unit 2800

Marked up version of new claims listing on October 24, 2008, for cancellation of word "electrostatic" in claim 50(new) and of the last lines in claims 52(new) and 53(new)

(18)

1(twice amended)- Telescope optical device comprising a mirror and a device actuating the mirror,

characterized in that the mirror and the actuating device are free concave membranes without contact between them, or with other device, and tied by their central parts to the telescope.

14-15 (canceled), 18-19 (canceled), 44 (canceled), 45-49 (canceled)

50(new) Telescope optical device according to claim 1,

characterized in that there are two levels of control to give at the free membranous mirror a perfect shape :

In a first level, an approximate shape is given to the free actuating membrane by interaction of a magnetic field tied to the telescope with magnetic fields generated by actuating membrane;

in a second level, a perfect form is given to the free membranous mirror by electrostatic interaction of the free actuating membrane with the free membranous mirror.

51(new) Telescope optical device according to claim 1,

characterized in that by use of the capacitive coupling between the conductive layer of the mirror and specific electrodes of the actuating membrane, the spread electronic integrated in the actuating membrane acts for the self-stabilisation of the shape of the system mirror-actuating membrane.

52(new) Optical device according to claim 1,

characterized in that, for its folding, the concave membranous mirror is deformed by the formation of concentric circular undulations obtained by a succession of centered distorsions alternately concave and convex, altering the pure concave surface of the membranous mirror in a circular surface comprising a series of circular centered waves whose the vertical crest to crest distance is so small as one wishes, in view of the number of waves so great as one wishes.

~~and in that the thin almost flat object so obtained is wound onto itself forming a cylinder.~~

53(new) Optical device according to claim 1,

characterized in that, for its folding, the concave membranous actuating membrane is deformed by the formation of concentric circular undulations obtained by a succession of centered distorsions alternately concave and convex, altering the pure concave surface of the actuating membrane in a circular surface comprising a series of circular centered waves whose the vertical crest to crest distance is so small as one wishes, in view of the number of waves so great as one wishes.

~~and in that the thin almost flat object so obtained is wound onto itself forming a cylinder.~~

27/04/09-12:25

16

US 08/809,620 (TE20081024)

Reply to OA on 04/30/08

27/04/09-12:25

17

US 08/809,620 (TE20081024)

Reply to OA on 04/30/08

→ Cassandra Speare
Art Unit 2800

(19)

Clean version of claims listing on October 24, 2008, after cancelation of word "electrostatic" in claim 50(new), and last lines in claims 52(new) and 53(new) .

1 (twice amended) Telescope optical device comprising a mirror and a device actuating the mirror,

characterized in that the mirror and the actuating device are free concave membranes without contact between them, or with other device, and tied by their central parts to the telescope.

14-15 (canceled), 18-19 (canceled), 44 (canceled), 45-49 (canceled)

50 (amended) Telescope optical device according to claim 1,

characterized in that there are two levels of control to give at the free membranous mirror a perfect shape :

In a first level, an approximate shape is given to the free actuating membrane by interaction of a magnetic field tied to the telescope with magnetic fields generated by actuating membrane;

in a second level, a perfect form is given to the free membranous mirror by interaction of the free actuating membrane with the free membranous mirror.

51 (new) Telescope optical device according to claim 1,

characterized in that by use of the capacitive coupling between the conductive layer of the mirror and specific electrodes of the actuating membrane, the spread electronic integrated in the actuating membrane acts for the self-stabilisation of the shape of the system mirror-actuating membrane.

52 (amended) Optical device according to claim 1,

characterized in that, for its folding, the concave membranous mirror is deformed by the formation of concentric circular ondulations obtained by a succession of centered distorsions alternately concave and convex, altering the pure concave surface of the membranous mirror in a circular surface comprising a series of circular centered waves whose the vertical crest to crest distance is so small as one wishes, in view of the number of waves so great as one wishes.

53 (amended) Optical device according to claim 1,

characterized in that, for its folding, the concave membranous actuating membrane is deformed by the formation of concentric circular ondulations obtained by a succession of centered distorsions alternately concave and convex, altering the pure concave surface of the actuating membrane in a circular surface comprising a series of circular centered waves whose the vertical crest to crest distance is so small as one wishes, in view of the number of waves so great as one wishes.

27/04/09-12:25

17

US 08/809,620 (TE20081024)

Reply to OA on 04/30/08

27/04/09-12:25

18

US 08/809,620 (TE20081024)

Reply to OA on 04/30/08

Cassandra Sprout Art Chat
F - New figure 6 - Now, to answer to the legitimate worry of the examiner about the figure 6, a single narrow line, it is simple to consider a membranous mirror of (moderate) diameter 10 meters and thickness 10 microns.

It is easy to have crest to crest thickness of 1 mm, without permanent residual distortion after unfolding in space.

At the scale of 10 cm pour 10 m, it is 1/100, the crest to crest thickness on the figure will be 1/100 mm.

For the actuating membrane of thickness of, for example, 100 microns, the thickness of the figure is 1/10 mm, in the order of the narrowest line made by standard printer or by ball-point pen.

That would be exactly the same thing with a 100 meters diameter membranous mirror.

So, the narrow line is the best representative figure.

(My patent 6,676,262 B1 is always a good reading...)

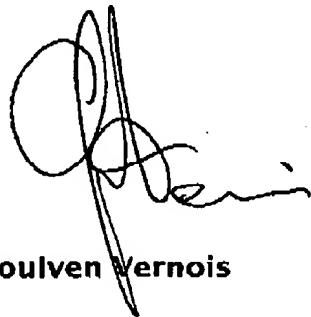
G - For the fun - If you consider a pure geometrical concave surface, without thickness but with a suitable strength modulus of course, the crest to crest will be at the limite really zero because the waves number can be infinite.

The true length will be always the length of the diametral arc of the concave surface, however can be the deep or arrow of the concave surface.

The real surface area of the transformed pure geometrical concave surface does not will be the classical projection of this concave surface on a plan, but well the surface area of this pure geometrical concave surface itself.

This topological entertainment is for the fun, of course! (You deserve, after the reading of my paper...)

Respectfully Yours



Goulen Vernois

27/04/09-12:25

18

US 08/809,620 (TE20081024)

Reply to OA on 04/30/08

US 07/809,620

Goulven VERNOIS

De : "Goulven VERNOIS" <vernois.5678@wanadoo.fr>
À : "Spyrou, Cassandra" <Cassandra.Spyrou@USPTO.GOV>
Envoyé : samedi 25 avril 2009 19:28
Objet : Phone call yesterday from PTO

Dear Guardian Angel,

I have received yesterday morning a surprising phone call from an employee of PTO.

He asked for a Claims Listing, a request for 5 months extension time, and of course for payment by Credit Card of 1175\$ fee !

And also the claim 2 ! This claim 2 is became claim 50 under the Office Action of 04/30/08 !

He gave me fax 571 273 0200

I have sent on this fax 571 273 0200 the Claims Listing already sent on 10/24/08 on fax 571 273 8300.

But it is no possible to ask for extension of time because lack of Office Action.

What is this ?

I have seen Translation History and Bibliographic Data on PAIR, and I do not undersatnd this request.

I have not seen my fax on 10/24/08 on History.

I send to you fax sent on 571 273 8300.

Dear Angel, save my application (the best space telescope for the futur !! !), and save my money !

Truly yours !

Goulven

----- Original Message -----

From: "Spyrou, Cassandra" <Cassandra.Spyrou@USPTO.GOV>
To: "Goulven VERNOIS" <vernois.5678@wanadoo.fr>